

We'll install a Windows operating system

How? By creating  
a Virtual Machine!



Some machines have  
HARDWARE Virtualisation  
features DISABLED

Right click on Taskbar to open

Run new task

Processes

Performance

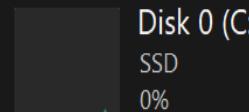
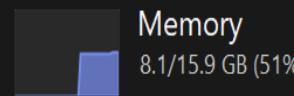
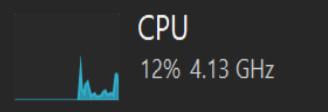
App history

Startup apps

Users

Details

Services



## CPU

% Utilization



Base speed:	3.60 GHz
Sockets:	1
Cores:	8
Logical processors:	16
Virtualization:	Enabled
L1 cache:	512 KB
L2 cache:	4.0 MB
L3 cache:	32.0 MB

If not follow your PC Manufacturer Guidelines

Virtual Machines are created

Via Software called

HYPERVISOR

Microsoft Hyper-V (One Hypervisor)  
Built in Windows!  
depending on its EDITION!





Order

Manage

FAQ

Sign in

Students—you're almost there! The developer tools and learning resources that were previously part of your Imagine account are now available with Azure Dev Tools for Teaching. Sign in using the button below—you'll be taken to a page requesting you to sign in using a Microsoft Account. Learn about Microsoft Accounts [here](#).

Note: Please use the email you provided for your previous Imagine subscription access when creating a new Microsoft Account.

WITH DSTI

  
Sign In

If you are having issues getting access, please reference our [help guide](#). For additional support, please check out [student FAQ](#).

Once form is filled in  
→ AZURE PORTAL



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A Education - Microsoft Azure X DSTI Course: [S24] WarmUp X | +

portal.azure.com/?Microsoft\_Azure\_Education\_correlationId=b1afb2ff-f5ee-4ee9-9fb2-56c01cf71a38#view/Microsoft\_Azure\_Education...

Microsoft Azure

Search resources, services, and docs (G+/)

sebastien.corniglion@... DATA SCIENCE TECH INSTITUTE

Home > Education | Overview

Get started Overview

Overview

Learning resources

Roles

Software

Learning

Templates

Github

Need help?

Support

go there

→ Per Year

Student offer details

Available credits

US\$100 out of US\$100

Days until credit expires

258

Expires on 12/21/2024

Popular solutions

Deploy a Docker container

Create simple containers to host apps,

Create your first Node.js app

Build and deploy web, mobile and API-based

Create and train a Machine Learning model

Train, deploy, automate, manage, and track

Windows Start button

Search icon

Elevate icon

File Explorer icon

OneDrive icon

Task View icon

Google Chrome icon

PowerShell icon

Visual Studio Code icon

Power BI icon

Microsoft Edge icon

File icon

Image icon

Diagram icon

Graph icon

Settings icon

Help icon

Feedback icon

Download icon

Star icon

Copy icon

Print icon

User icon

More options icon

10:50

ENG FR

4/8/2024







Alexander G Bell  
Local Account

## System > Activation



Windows 11 Education

Find a setting

### System

Bluetooth & devices

Network & internet

Personalization

Apps

Accounts

Time & language

Gaming

Accessibility

Privacy & security

Windows Update



Activation state

Active

Change

Change product key

Get help

Give feedback

I  
You Must  
Upgrade Your Windows  
(involves a Reboot) Edition



Side comment

The Windows Defender

Antivirus is Good !

Get rid of any other

Norton  
McAfee  
!

← Settings



Alexander G Bell  
Local Account

Find a setting  🔎



Windows 11 Education

Activation state

Active  🔍

Change product key

Change

Get help

Give feedback

+ the "old"

CONTROL PANEL app

(notably for networking)

Windows features

System

Bluetooth & devices

Network & internet

Personalization

Apps

Accounts

Time & language

Gaming

Accessibility

Privacy & security

Windows Update



11:01  
4/8/2024



Alexander G Bell  
Local Account

Find a setting

System

Bluetooth &amp; devices

Network &amp; internet

Personalization

Apps

Accounts

Time &amp; language

Gaming

Accessibility

Privacy &amp; security

Windows Update



Programs

Control Panel Home      Control Panel > Programs

System and Security      Network and Internet      Hardware and Sound

● Programs

- User Accounts
- Appearance and Personalization
- Clock and Region
- Ease of Access

Programs and Features

- Uninstall a program
- Turn Windows features on or off
- View installed updates
- Run programs made for previous versions of Windows
- How to install a program

Default Programs

Change default settings for media or devices

Active Change



Alexander G Bell  
Local Account

Windows Features

Find a

## Turn Windows features on or off

To turn a feature on, select its check box. To turn a feature off, clear its check box. A filled box means that only part of the feature is turned on.

- +  .NET Framework 3.5 (includes .NET 2.0 and 3.0)
- +  .NET Framework 4.8 Advanced Services
  - Active Directory Lightweight Directory Services
  - Containers
  - Data Center Bridging
- +  Device Lockdown
- +  Guarded Host
- +  Hyper-V
- +  Internet Information Services
  - Internet Information Services Hostable Web Core
- +  Legacy Components
- +  Media Features
  - Microsoft Defender Application Guard
- +  Microsoft Message Queue (MSMQ) Server
  - Microsoft Print to PDF
  - Microsoft XPS Document Writer
- +  MultiPoint Connector
- +  Print and Document Services
  - Remote Differential Compression API Support
- +  Services for NFS

Everything  
Should  
be checked  
With "right" Windows Edition  
+ Hardware Virtualisation  
Features

OK

Cancel





Alexander G Bell  
Local Account

Windows Features

## Find a Windows feature

To turn a feature on, select its check box. To turn a feature off, clear its check box. A filled box means that only part of the feature is turned on.

- Microsoft XPS Document Writer
- MultiPoint Connector
- Print and Document Services
- Remote Differential Compression API Support
- Services for NFS
- Simple TCP/IP services (i.e. echo, daytime etc)
- SMB 1.0/CIFS File Sharing Support
- SMB Direct
- Telnet Client **>> check! IMPORTANT**
- TFTP Client
- Virtual Machine Platform
- Windows Hypervisor Platform
- Windows Identity Foundation 3.5
- Windows PowerShell 2.0
- Windows Process Activation Service
- Windows Projected File System
- Windows Sandbox
- Windows Subsystem for Linux
- Windows TIFF IFilter
- Work Folders Client



Windows features on or off | View installed updates |  
Windows updates | How to install a program

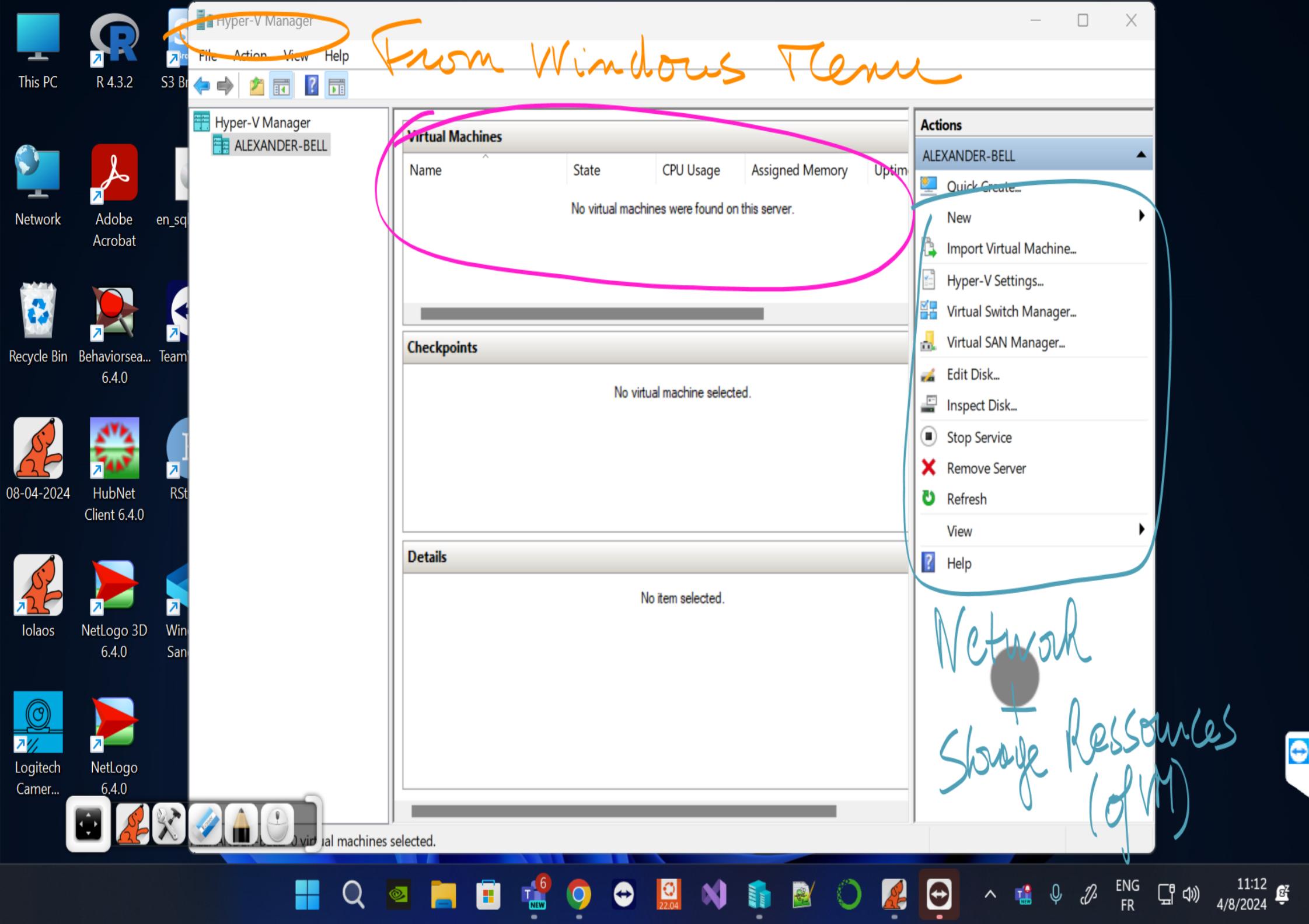
devices

Rebooting for Hyper-V and these

Active

Change

Check this two also →  
LINUX Kernel in a Hyper-V Virtual Machine



From Windows Team

Network  
+  
Storage Resources  
(of VM)

### Virtual Machines

Name	State	CPU Usage	Assigned Memory	Optim.
------	-------	-----------	-----------------	--------

No virtual machines were found on this server.

### Checkpoints

No virtual machine selected.

### Details

No item selected.

### Actions

ALEXANDER-BELL

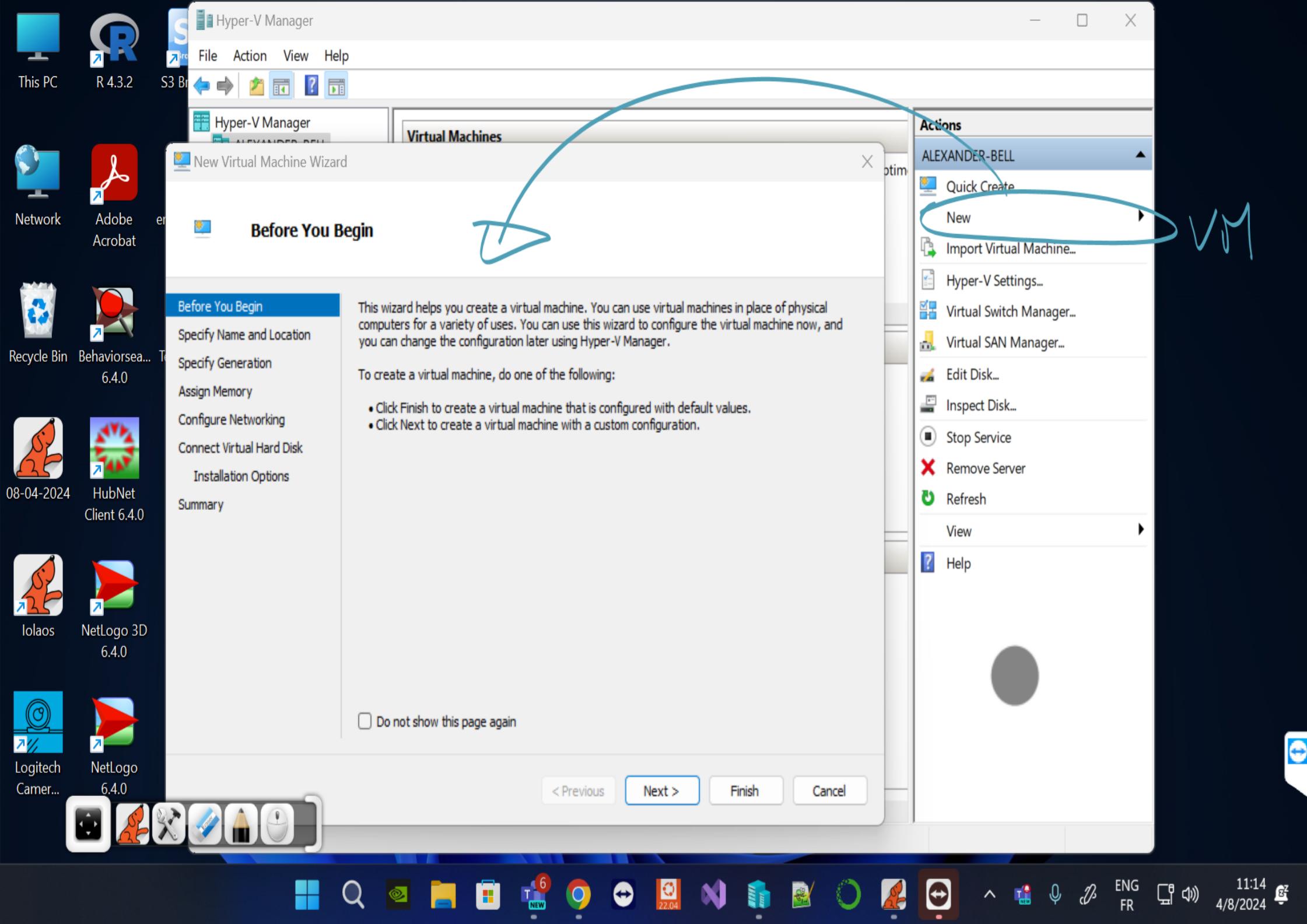
- Quick Create...
  - New
  - Import Virtual Machine...
  - Hyper-V Settings...
  - Virtual Switch Manager...
  - Virtual SAN Manager...
  - Edit Disk...
  - Inspect Disk...
  - Stop Service
  - Remove Server
  - Refresh
- View
- Help

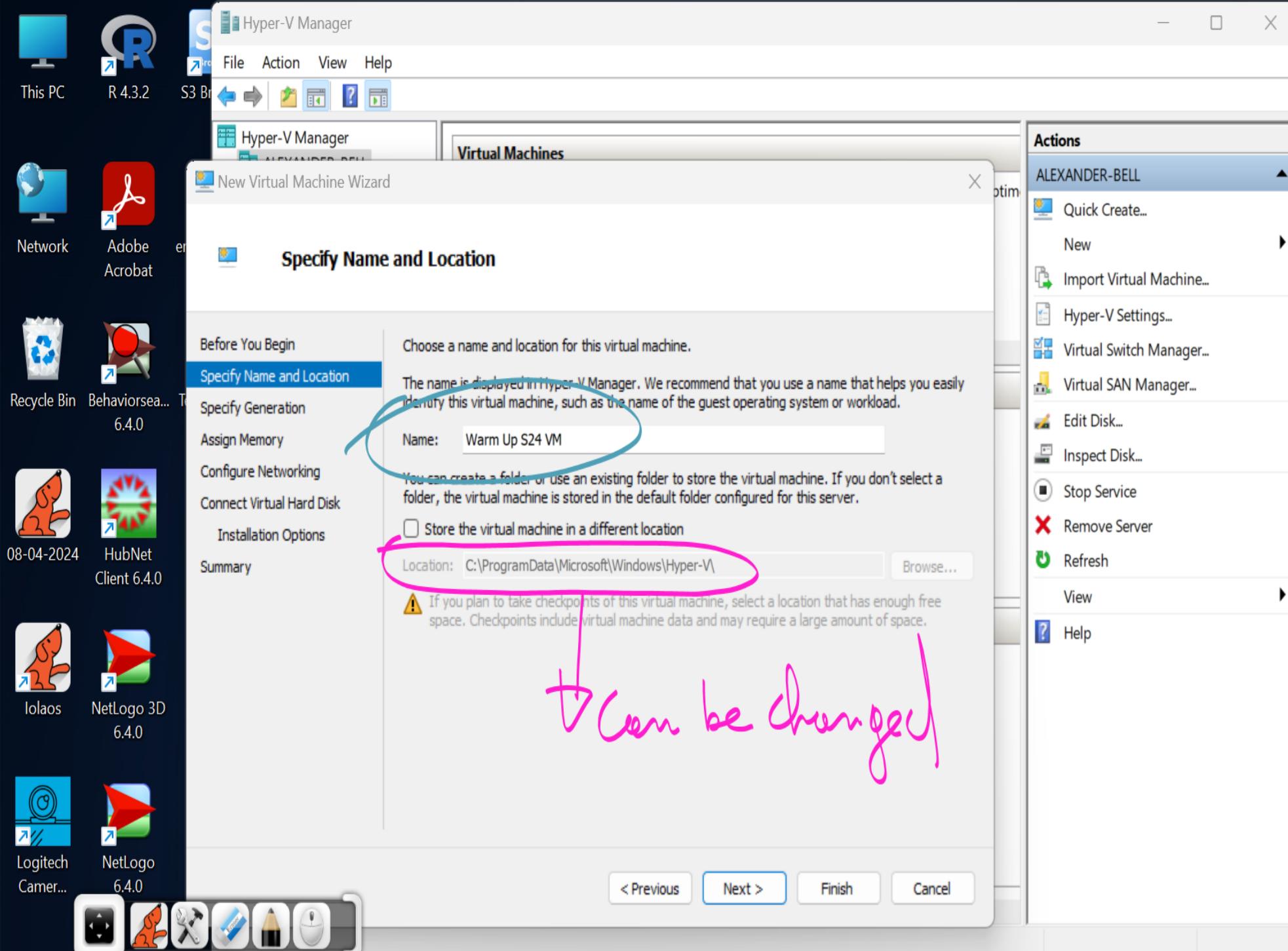
Virtual machines selected.



ENG  
FR

11:12  
4/8/2024





Hyper-V Manager

File Action View Help

This PC R 4.3.2 S3 Br

Hyper-V Manager ALEXANDER-BELL

New Virtual Machine Wizard

Virtual Machines

Actions

ALEXANDER-BELL

- Quick Create...
- New
- Import Virtual Machine...
- Hyper-V Settings...
- Virtual Switch Manager...
- Virtual SAN Manager...
- Edit Disk...
- Inspect Disk...
- Stop Service
- Remove Server
- Refresh

View

Help

Specify Generation

Before You Begin

Specify Name and Location

Specify Generation

Assign Memory

Configure Networking

Connect Virtual Hard Disk

Installation Options

Summary

Choose the generation of this virtual machine.

Generation 1

This virtual machine generation supports 32-bit and 64-bit guest operating systems and provides virtual hardware which has been available in all previous versions of Hyper-V.

Generation 2

This virtual machine generation provides support for newer virtualization features, has UEFI-based firmware, and requires a supported 64-bit guest operating system.

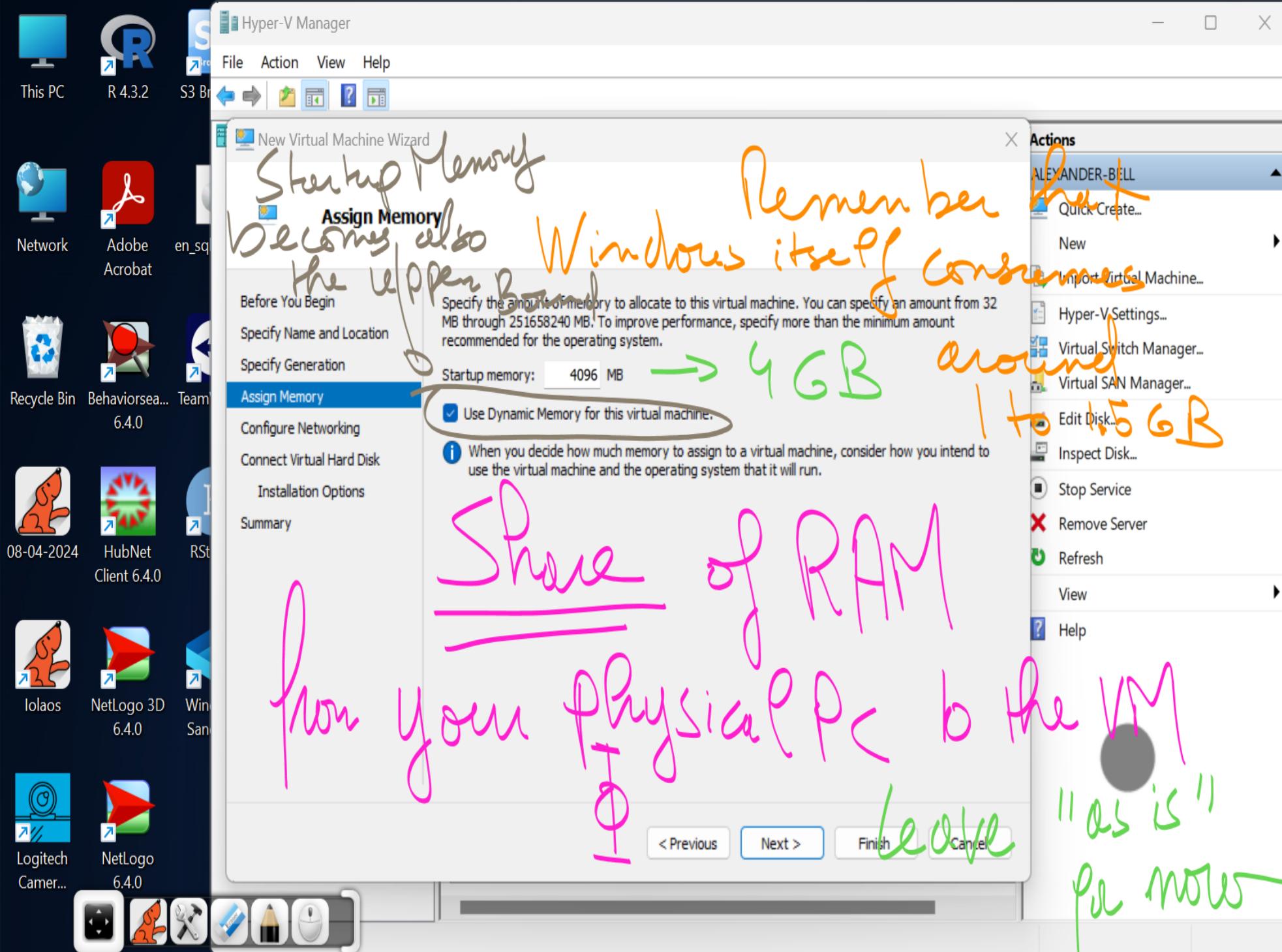
⚠ Once a virtual machine has been created, you cannot change its generation.

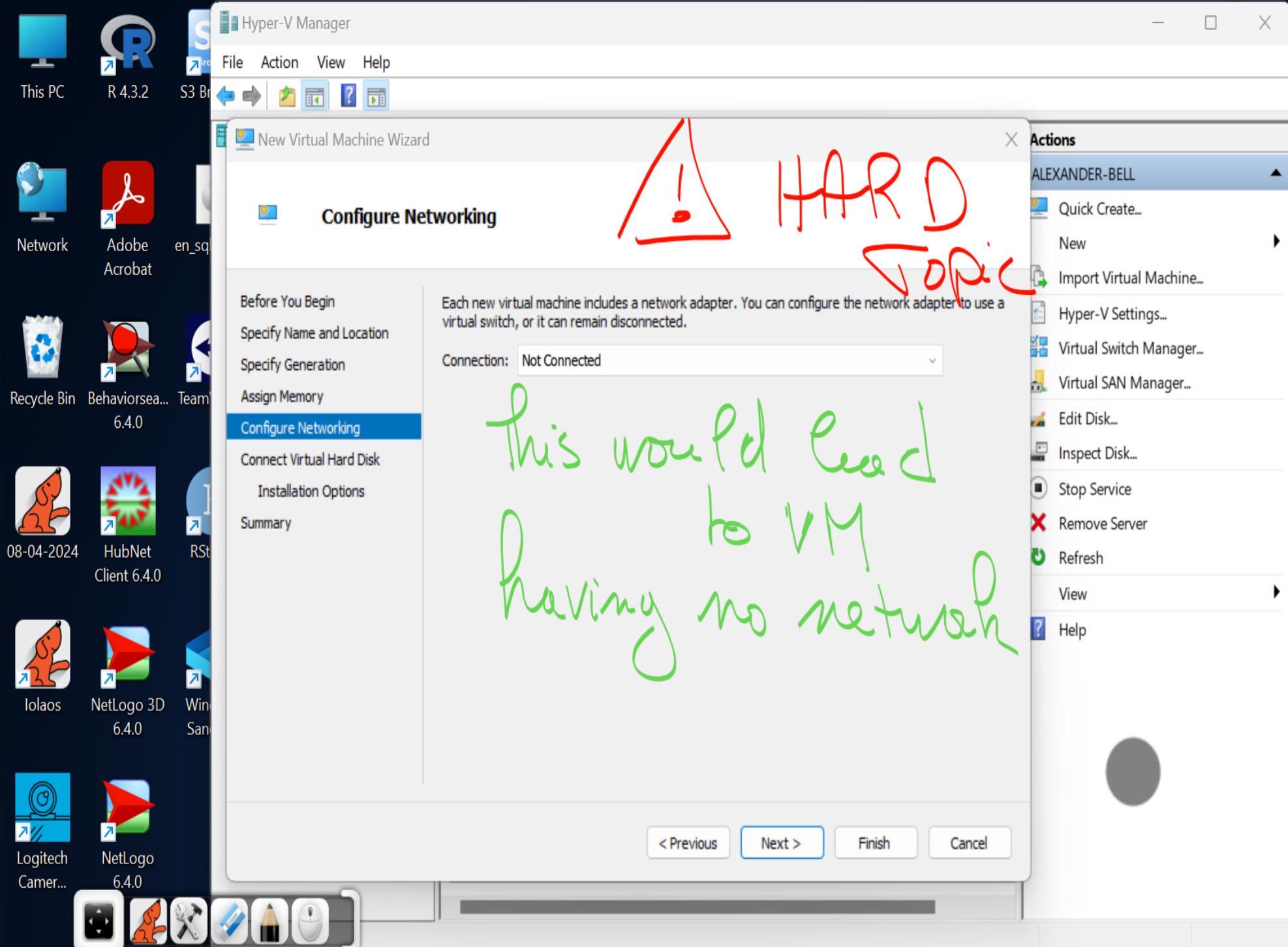
More about virtual machine generation support

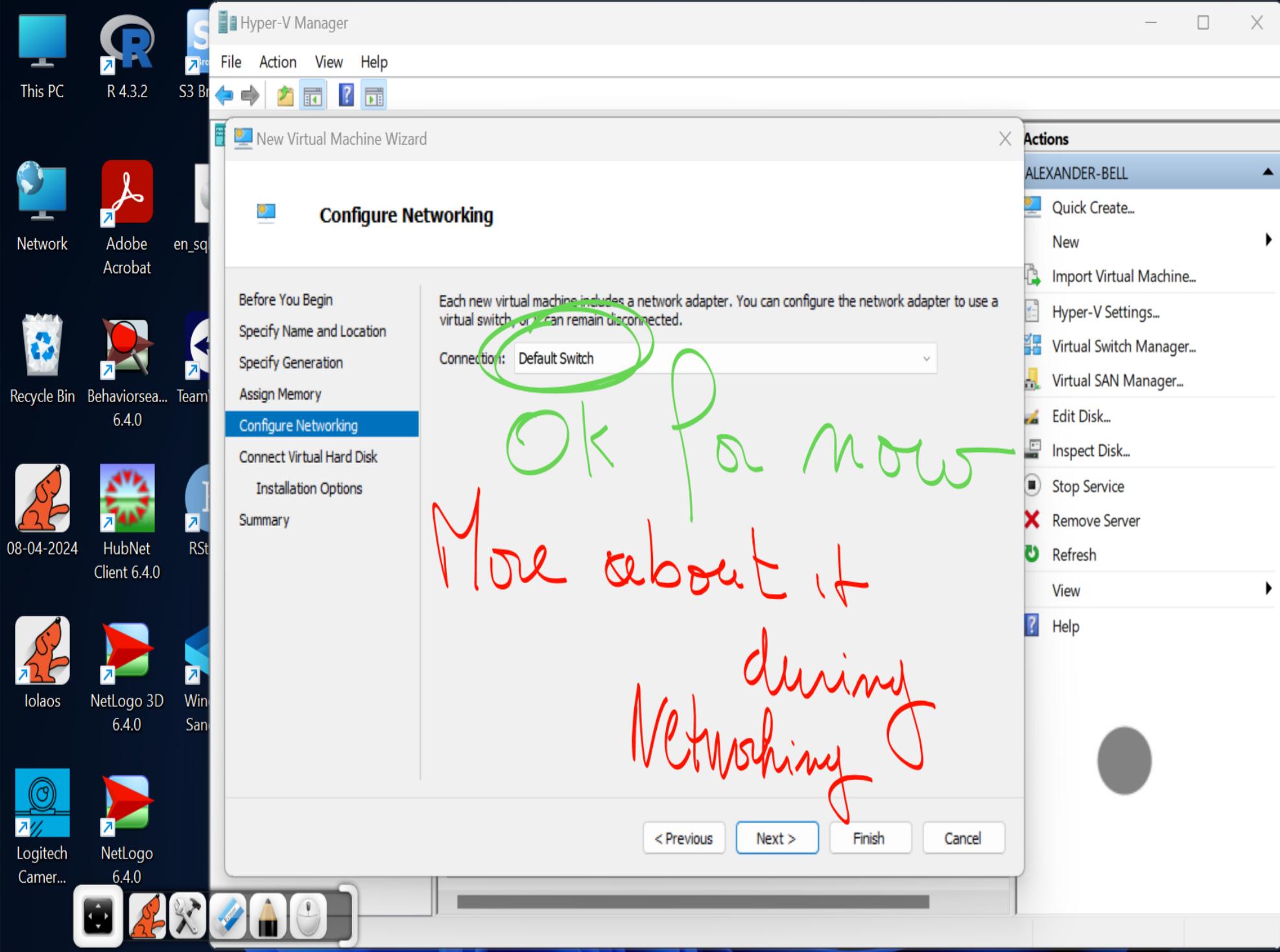
< Previous Next > Finish Cancel

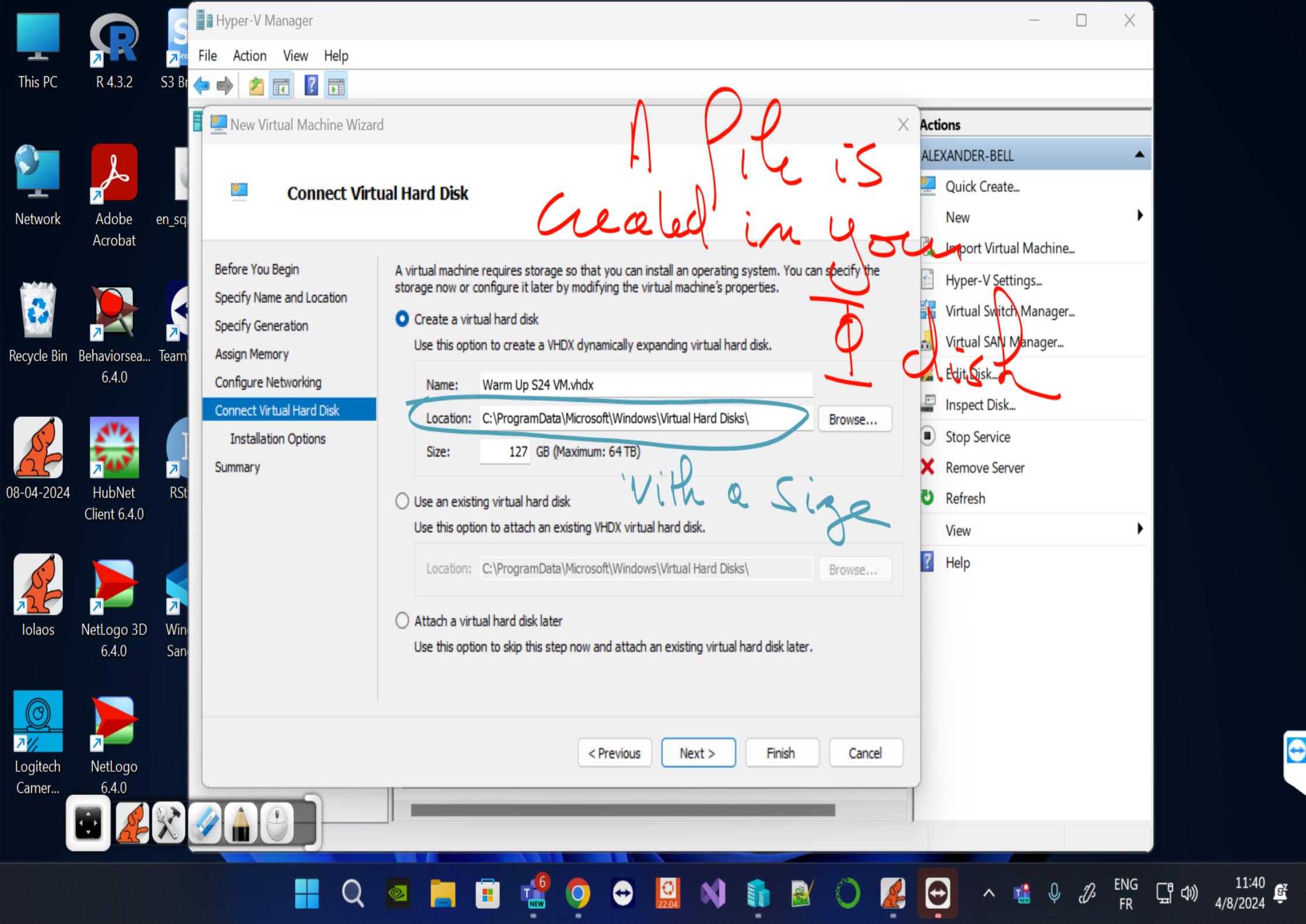
Topics to be discussed during other days of Win Up

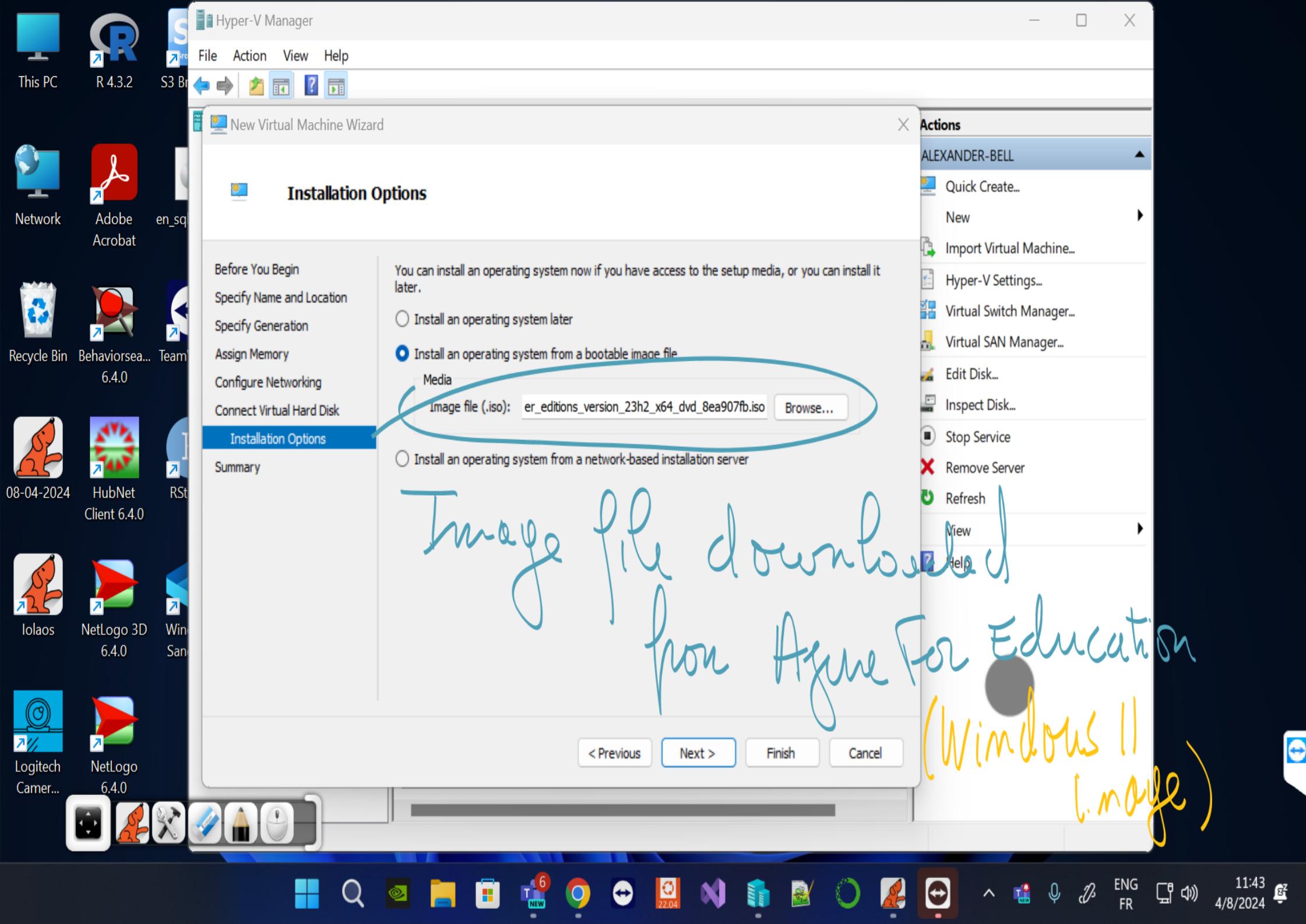
11:15 4/8/2024 ENG FR











Hyper-V Manager

File Action View Help

Hyper-V Manager ALEXANDER-BELL

Virtual Machines

Name	State	CPU Usage	Assigned Memory	Uptime	Status	Configuration Version
Warm Up S24 VM	Off					11.0

Checkpoints

The selected virtual machine has no checkpoints.

Warm Up S24 VM

Created: 4/8/2024 11:44:21 AM Clustered: No

Configuration Version: 11.0

Generation: 2

Notes: None

Networking

ALEXANDER-BELL virtual machine selected.

Actions

- Quick Create...
- New
- Import Virtual Machine...
- Hyper-V Settings...
- Virtual Switch Manager...
- Virtual SAN Manager...
- Edit Disk...
- Inspect Disk...
- Stop Service
- Remove Server
- Refresh

View

Help

Warm Up S24 VM

- Connect...
- Settings... (circled)
- Start
- Checkpoint
- Move...
- Export...
- Rename...

ENG FR 11:44 4/8/2024

Handwritten notes:  
Settings done  
Machine State is OFF

Hyper-V Manager

File Action View Help

Hyper-V Manager ALEXANDER-BELL

Virtual Machines

Name	State	CPU Usage	Assigned Memory	Uptime	Status	Configuration
Warm Up S24 VM	Off					11.0

Warm Up S24 VM on ALEXANDER-BELL - Virtual Machine Connection

File Action Media View Help

Checkpoints

The virtual machine 'Warm Up S24 VM' is turned off

To start the virtual machine, select 'Start' from the Action menu

Start

Actions

ALEXANDER-BELL

- Quick Create...
- New
- Import Virtual Machine...
- Hyper-V Settings...
- Virtual Switch Manager...
- Virtual SAN Manager...
- Edit Disk...
- Inspect Disk...
- Stop Service
- Remove Server
- Refresh

View

Help

Warm Up S24 VM

- Connect...
- Settings...
- Start
- Checkpoint
- Move...
- Export...
- Rename...

11:46 4/8/2024 ENG FR

Hyper-V Manager

File Action View Help

Hyper-V Manager ALEXANDER-BELL

Virtual Machines

Name	State	CPU Usage	Assigned Memory	Uptime	Status	Configuration
Warm Up S24 VM	Off					11.0

Warm Up S24 VM on ALEXANDER-BELL - Virtual Machine Connection

File Action Media View Help

Checkpoints

The virtual machine 'Warm Up S24 VM' is turned off

To start the virtual machine, select 'Start' from the Action menu

Start

Actions

ALEXANDER-BELL

- Quick Create...
- New
- Import Virtual Machine...
- Hyper-V Settings...
- Virtual Switch Manager...
- Virtual SAN Manager...
- Edit Disk...
- Inspect Disk...
- Stop Service
- Remove Server
- Refresh

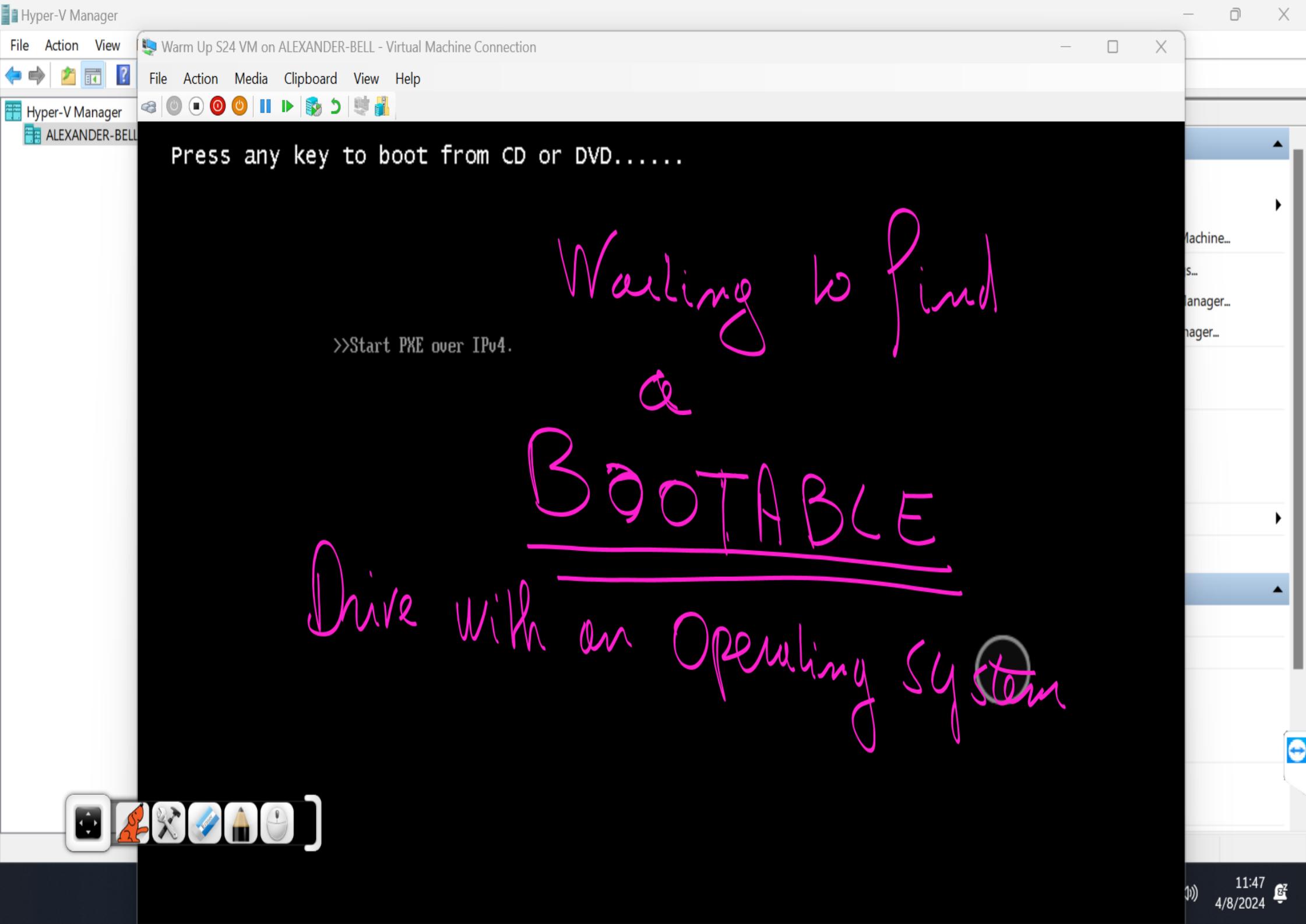
View

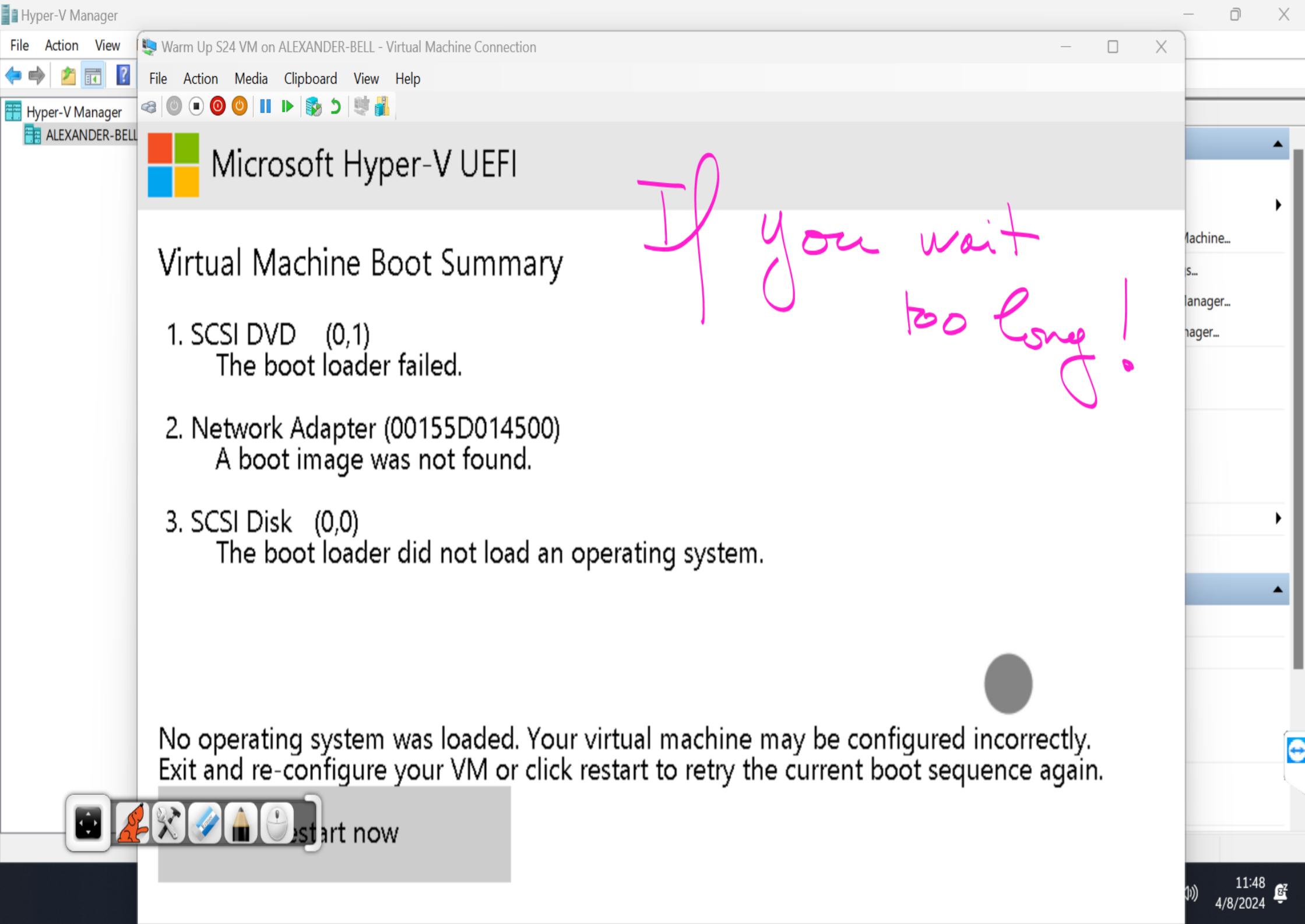
Help

Warm Up S24 VM

- Connect...
- Settings...
- Start
- Checkpoint
- Move...
- Export...
- Rename...

11:46 4/8/2024 ENG FR





**BEFORE running VM**

**SHOULD BE CHECKED**

**CHECK THIS ONE**

**Actions**

- ALEXANDER-BELL
- Quick Create...
- New
- Import Virtual Machine...
- Hyper-V Settings...
- Virtual Switch Manager...
- Virtual SAN Manager...
- Edit Disk...
- Inspect Disk...
- Stop Service
- Remove Server
- Refresh
- View
- Help
- Warm Up S24 VM
- Connect...
- Settings... (highlighted)
- Turn Off...
- Shut Down...
- Save
- Pause
- Reset

OK Cancel Apply

File Action

Hyper-V Manager

Warm Up S24 VM

**Hardware**

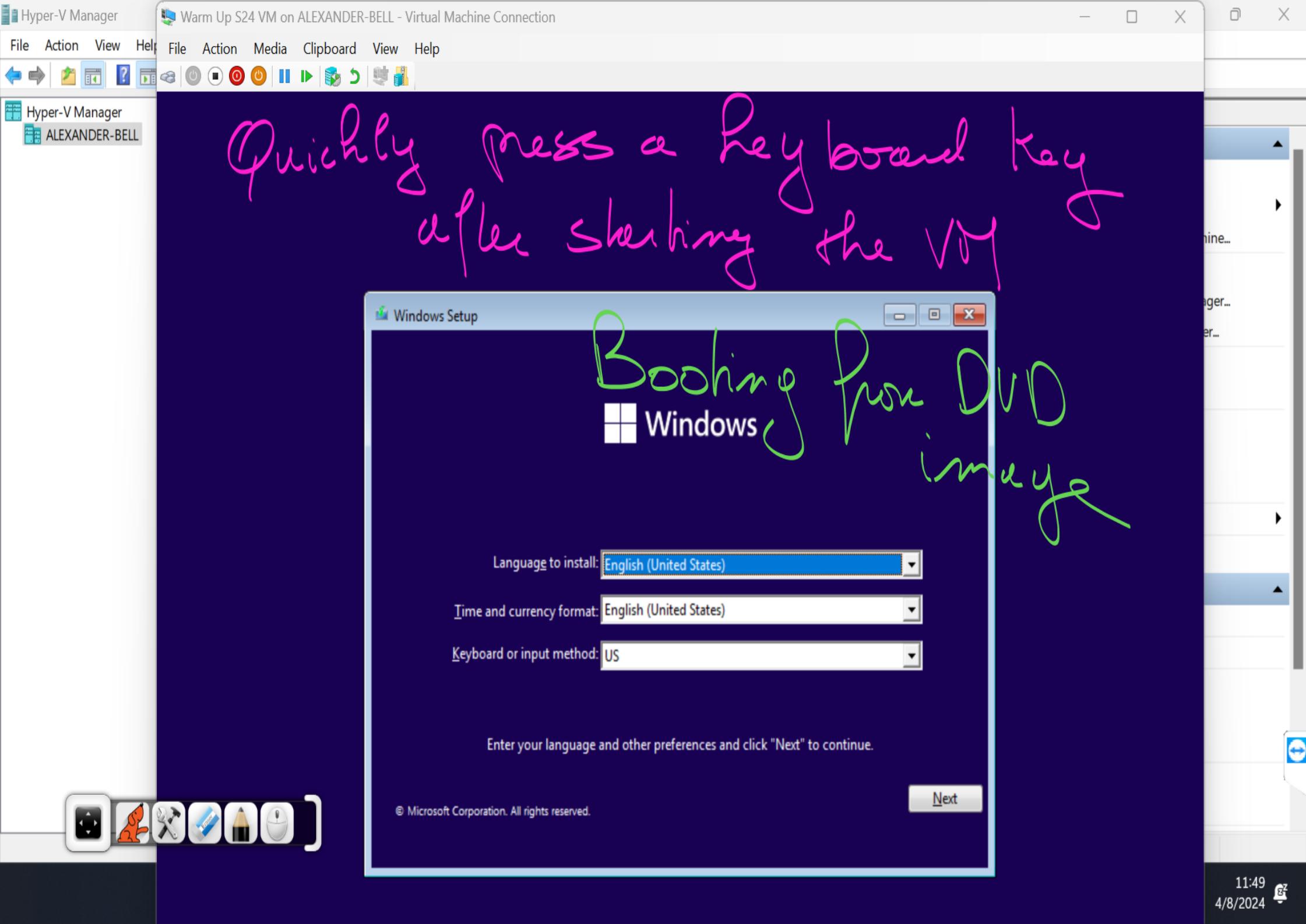
- Add Hardware
- Firmware
- Boot from DVD Drive
- Security
- TPM enabled
- Memory
- 4096 MB
- Processor
- 8 Virtual processors
- SCSI Controller
  - Hard Drive
  - Warm Up S24 VM\_11A43540-B...
  - DVD Drive
  - en-us\_windows\_11\_consumer...
- Network Adapter
- Default Switch

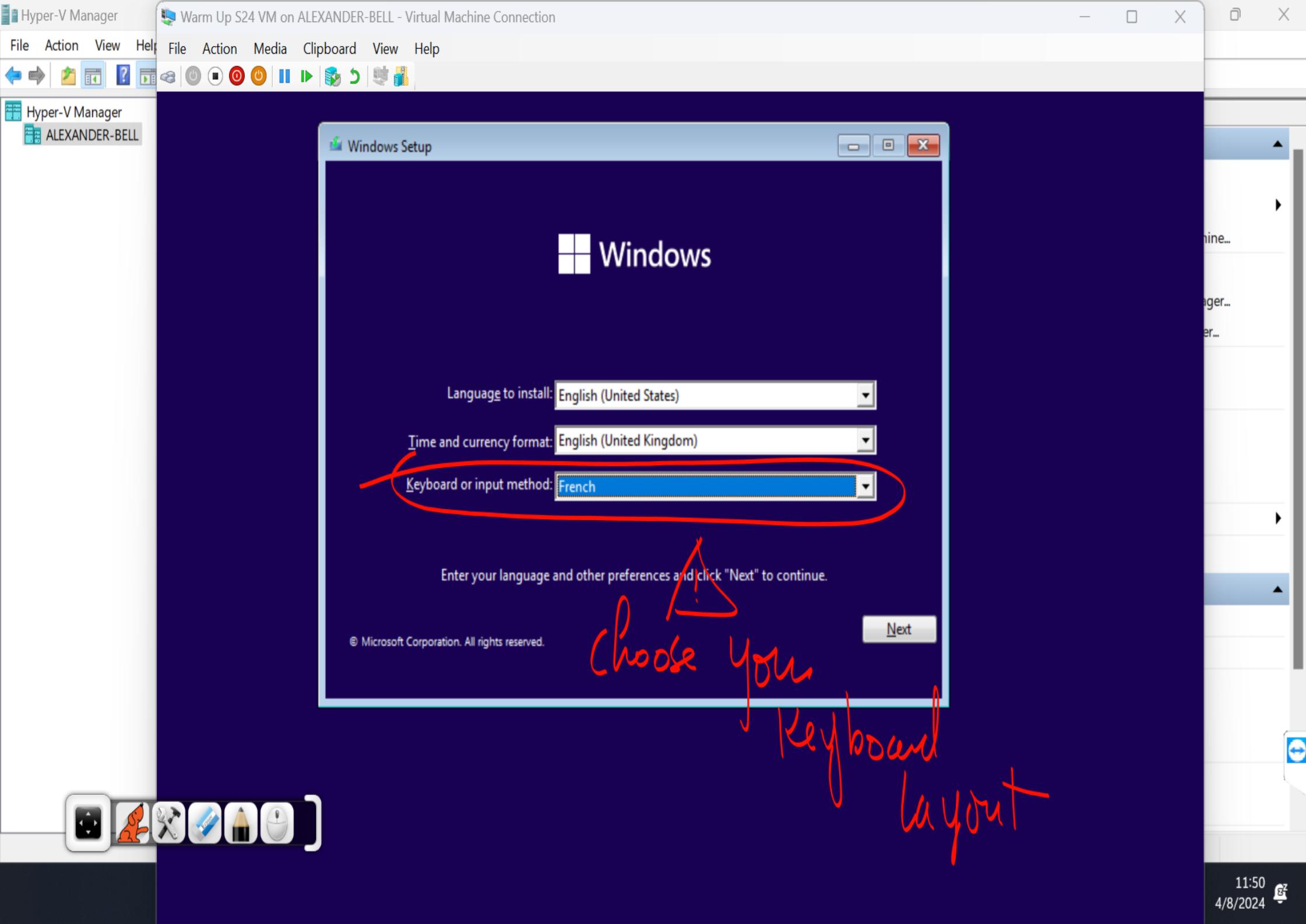
**Management**

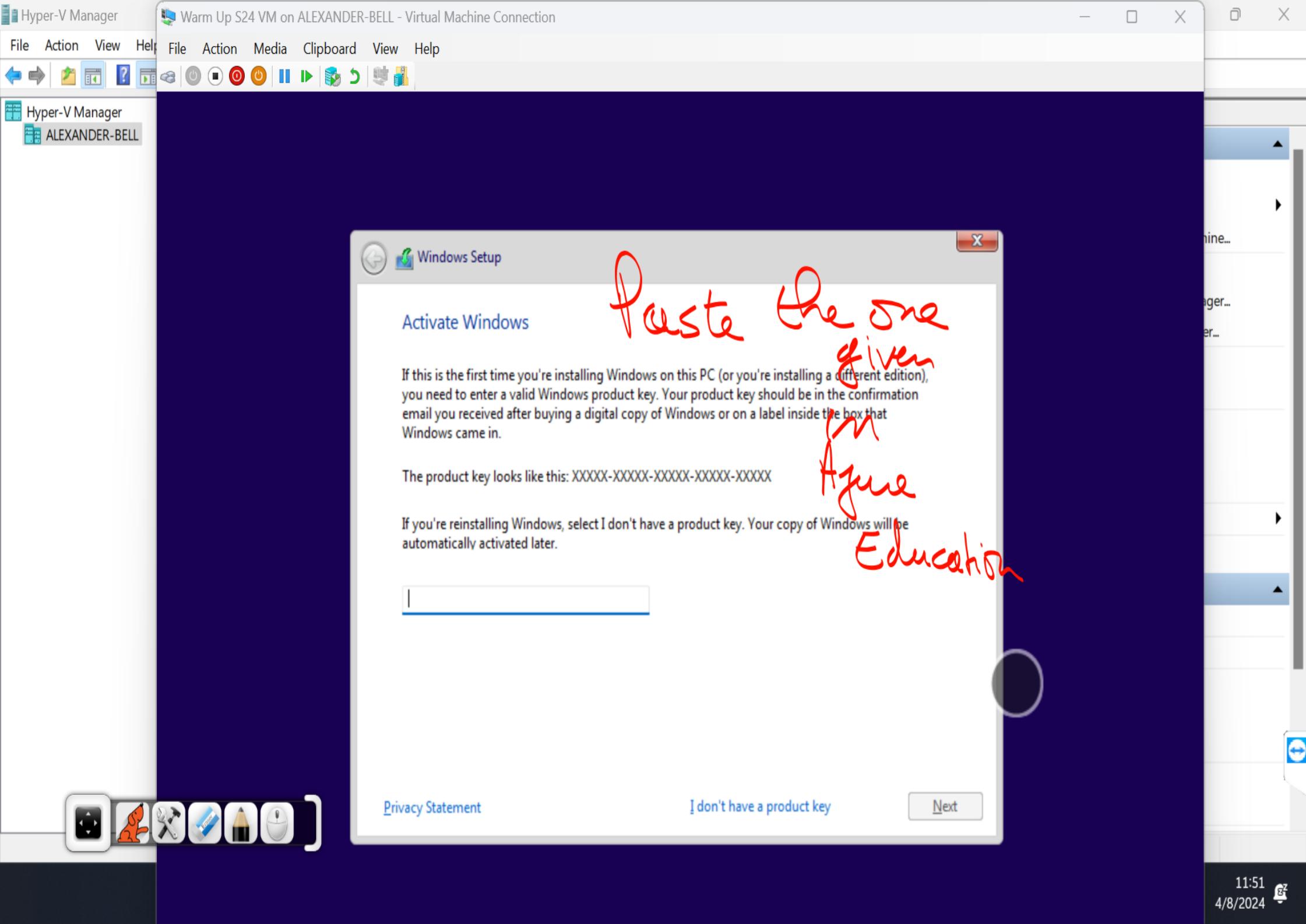
- Name
- Warm Up S24 VM
- Integration Services
- Some services offered
- Checkpoints
- Standard
- Smart Paging File Location
- C:\ProgramData\Microsoft\Windows...
- Automatic Start Action
- Restart if previously running
- Automatic Stop Action
- Save

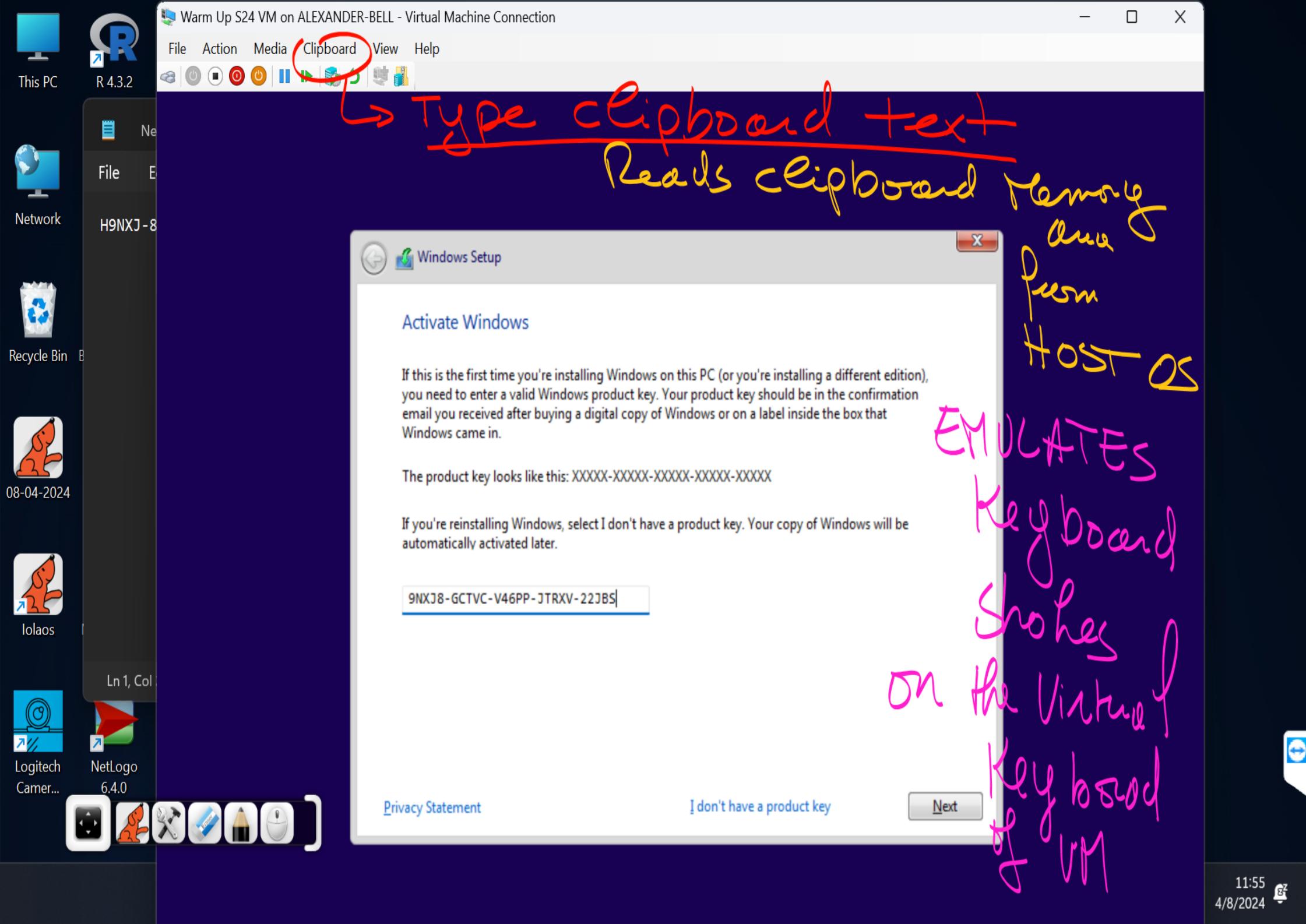
Hyper-V Manager ALEXANDER-BELL

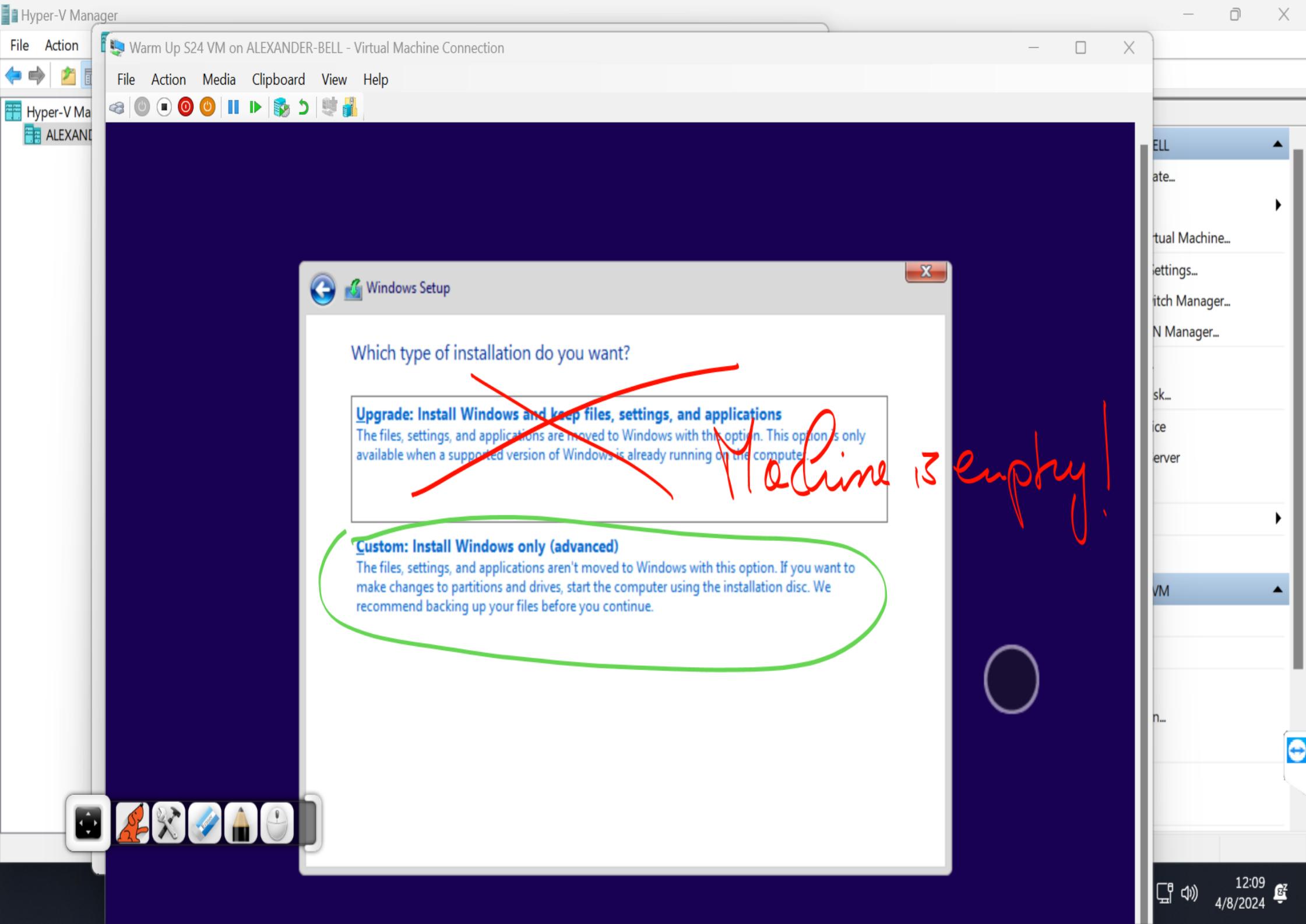
22.04 12:05 4/8/2024 ENG FR

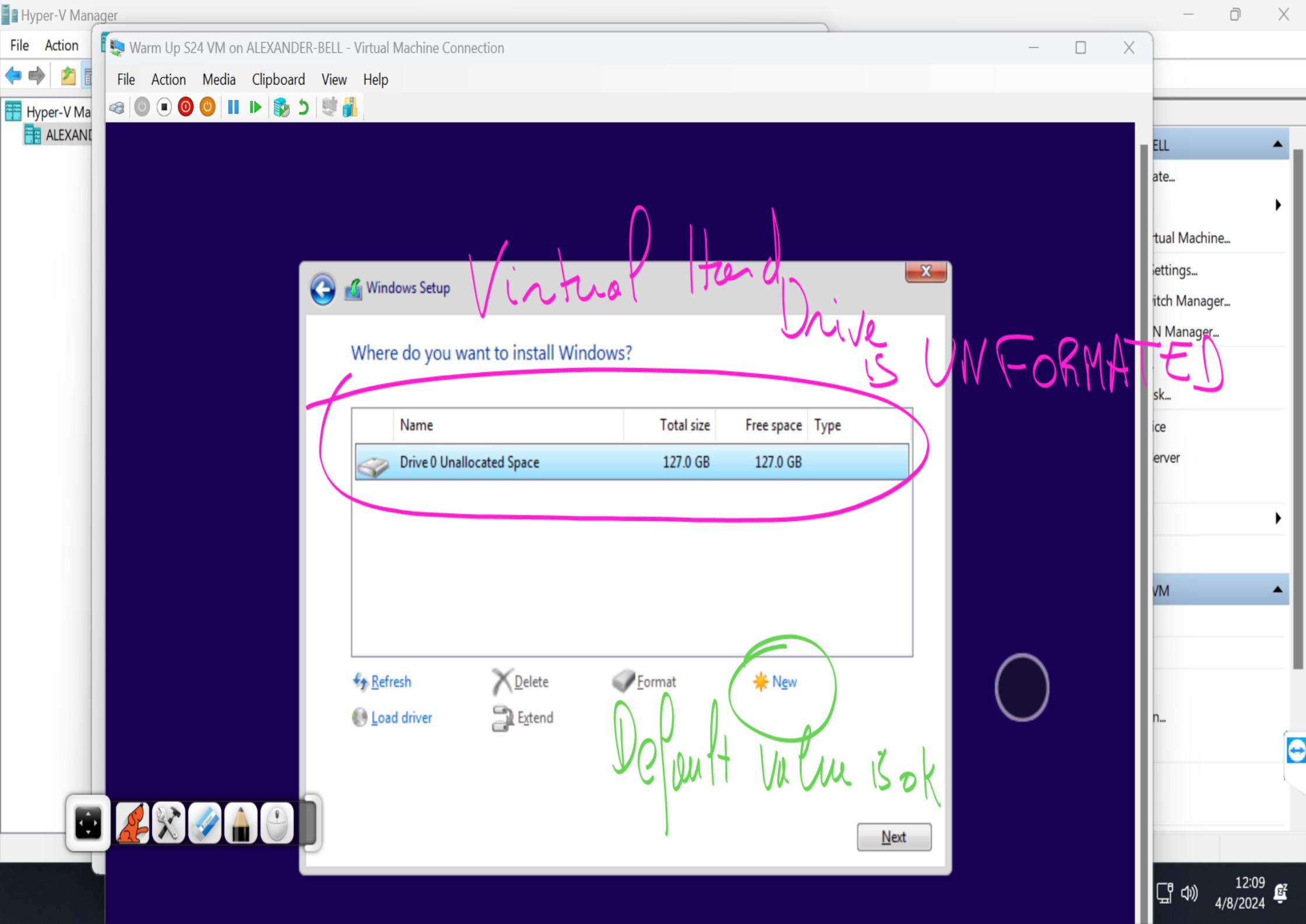


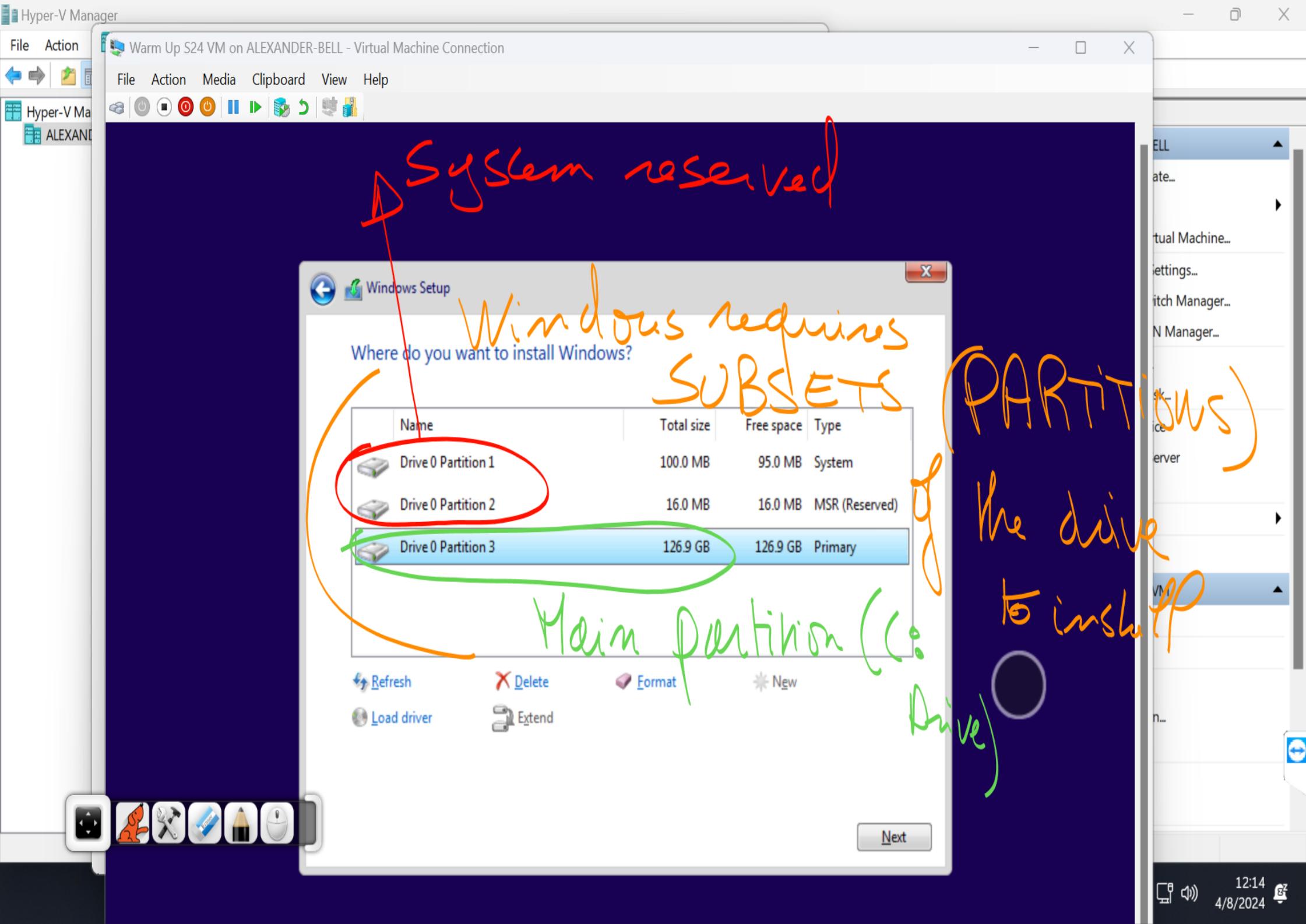


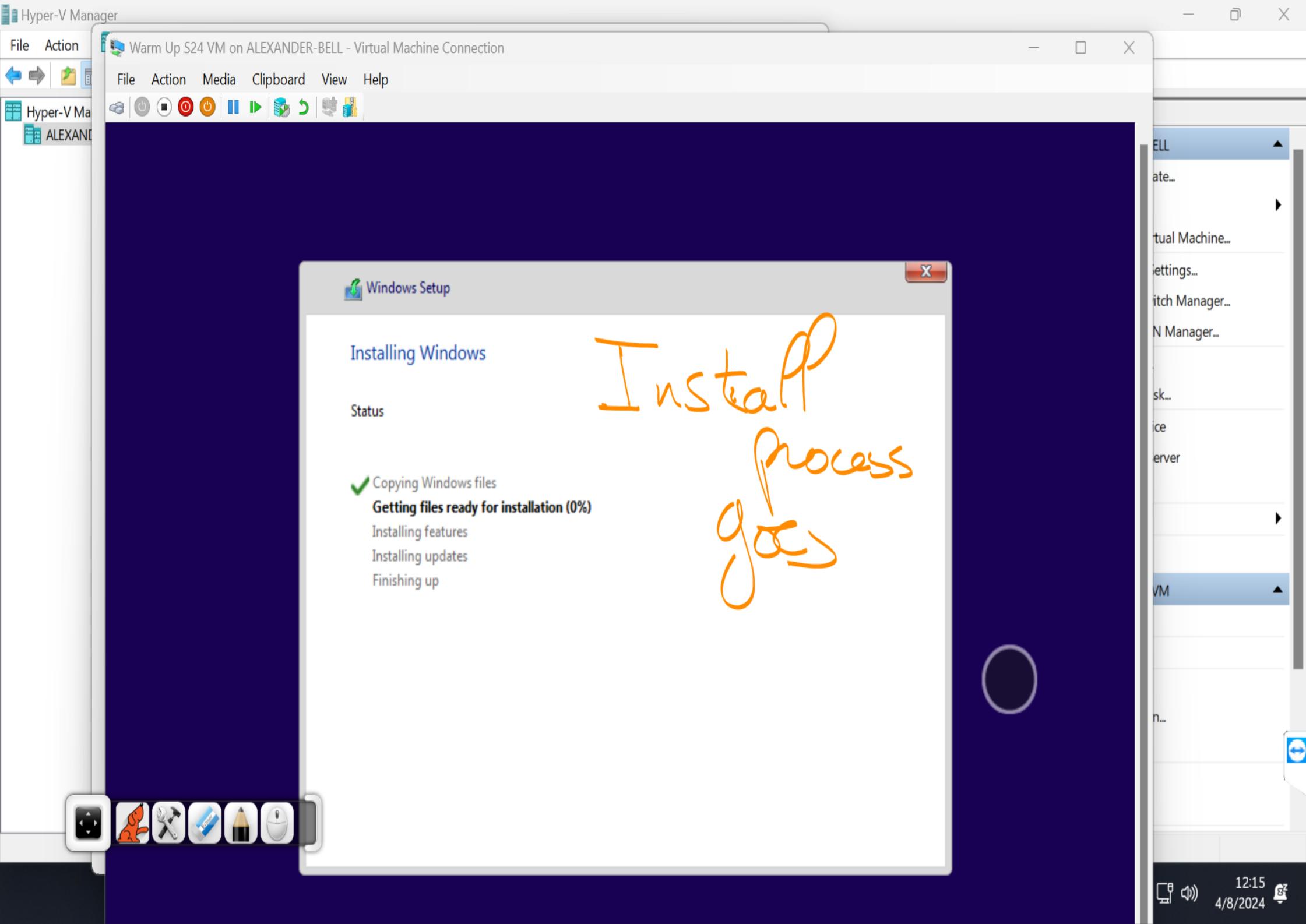








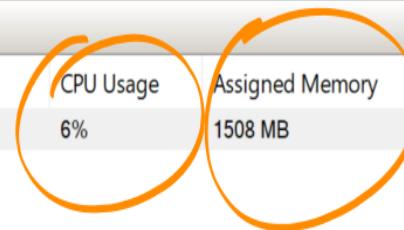




Hyper-V Manager  
ALEXANDER-BELL

## Virtual Machines

Name	State	CPU Usage	Assigned Memory	Uptime	Status	Configuration
Warm Up S24 VM	Running	6%	1508 MB	00:12:20		11.0



## Checkpoints

- Automatic Checkpoint - Warm Up S24 VM - (4/8/2024 - 12:04:43 PM)  
Now

## Warm Up S24 VM



**Created:** 4/8/2024 11:44:21 AM  
**Configuration Version:** 11.0  
**Generation:** 2  
**Notes:** None

**Clustered:** No  
**Heartbeat:** No Contact



Networking

ALEXANDER-BELL virtual machine selected.

## Actions

- ALEXANDER-BELL
  - Quick Create...
  - New
  - Import Virtual Machine...
  - Hyper-V Settings...
  - Virtual Switch Manager...
  - Virtual SAN Manager...
  - Edit Disk...
  - Inspect Disk...
  - Stop Service
  - Remove Server
  - Refresh
  - View
  - Help
- Automatic Checkpoint - Warm Up...
- Connect...
  - Settings...
  - Turn Off...
  - Shut Down...
  - Save
  - Pause
  - Reset

Copying Windows files  
Getting files ready for installation (98%)

ENG FR 12:17 4/8/2024

Hyper-V Manager

File Action View Help

Hyper-V Manager ALEXANDER-BELL

Task Manager

Virtual Machines

Type a name, publisher, or PID to search

VM MEM process in Host OS

VM MEM process in Host OS

VMMEM

process in Host OS

Efficiency mode

Processes

Performance

App history

Startup apps

Users

Details

Services

VM MEM process in Host OS

The VM Consuming CPU resources

Name	Status	CPU	Memory	Disk	Network
Vmmem	Running	17.1%	0 MB	0 MB/s	0 Mbps
Microsoft Teams (work or sch...)	Running	7.6%	924.4 MB	0.1 MB/s	4.1 Mbps
System	Running	1.2%	0.1 MB	68.5 MB/s	0 Mbps
Desktop Window Manager	Running	1.0%	52.1 MB	0 MB/s	0 Mbps
TeamViewer	Running	0.7%	564.5 MB	0 MB/s	0 Mbps
Task Manager	Running	0.4%	69.5 MB	0 MB/s	0 Mbps
Service Host: Windows Camer...	Running	0.4%	42.0 MB	0 MB/s	0 Mbps
WMI Provider Host	Running	0.3%	16.3 MB	0 MB/s	0 Mbps
Microsoft Management Cons...	Running	0.3%	22.7 MB	0 MB/s	0 Mbps
System interrupts	Running	0.1%	0 MB	0 MB/s	0 Mbps
TeamViewer	Running	0%	12.6 MB	0 MB/s	0 Mbps
Iolaos (32 bit) (3)	Running	0%	311.0 MB	0.1 MB/s	0 Mbps
Service Host: Windows Manag...	Running	0%	16.2 MB	0 MB/s	0 Mbps

Actions

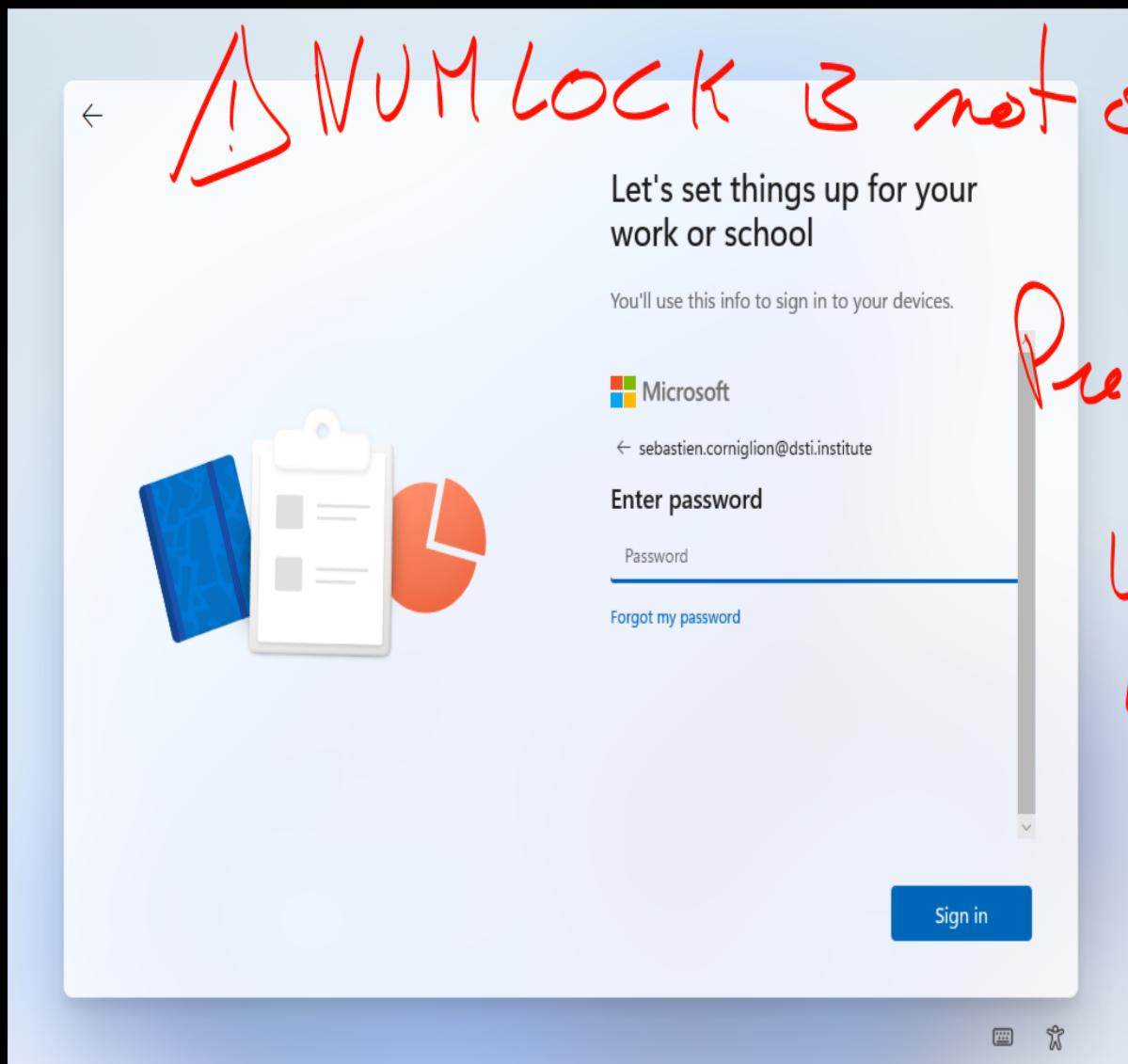
ALEXANDER-BELL

- Quick Create...
- New
- Import Virtual Machine...
- Hyper-V Settings...
- Virtual Switch Manager...
- Virtual SAN Manager...
- Edit Disk...
- Inspect Disk...
- Stop Service
- Remove Server
- Refresh
- View
- Help

Automatic Checkpoint - Warm Up...

- Connect...
- Settings...
- Turn Off...
- Shut Down...
- Save
- Pause
- Reset

12:17 4/8/2024 ENG FR



# The Windows SubSystem for Linux (WSL)

It's a "hidden", Hyper-V VM

With a Linux Kernel

Then, a DISTRIBUTION of Linux must  
be deployed above the kernel

Some well known Linux "Distro's"  
are : DEBIAN & Ubuntu

Fedora / Red Hat

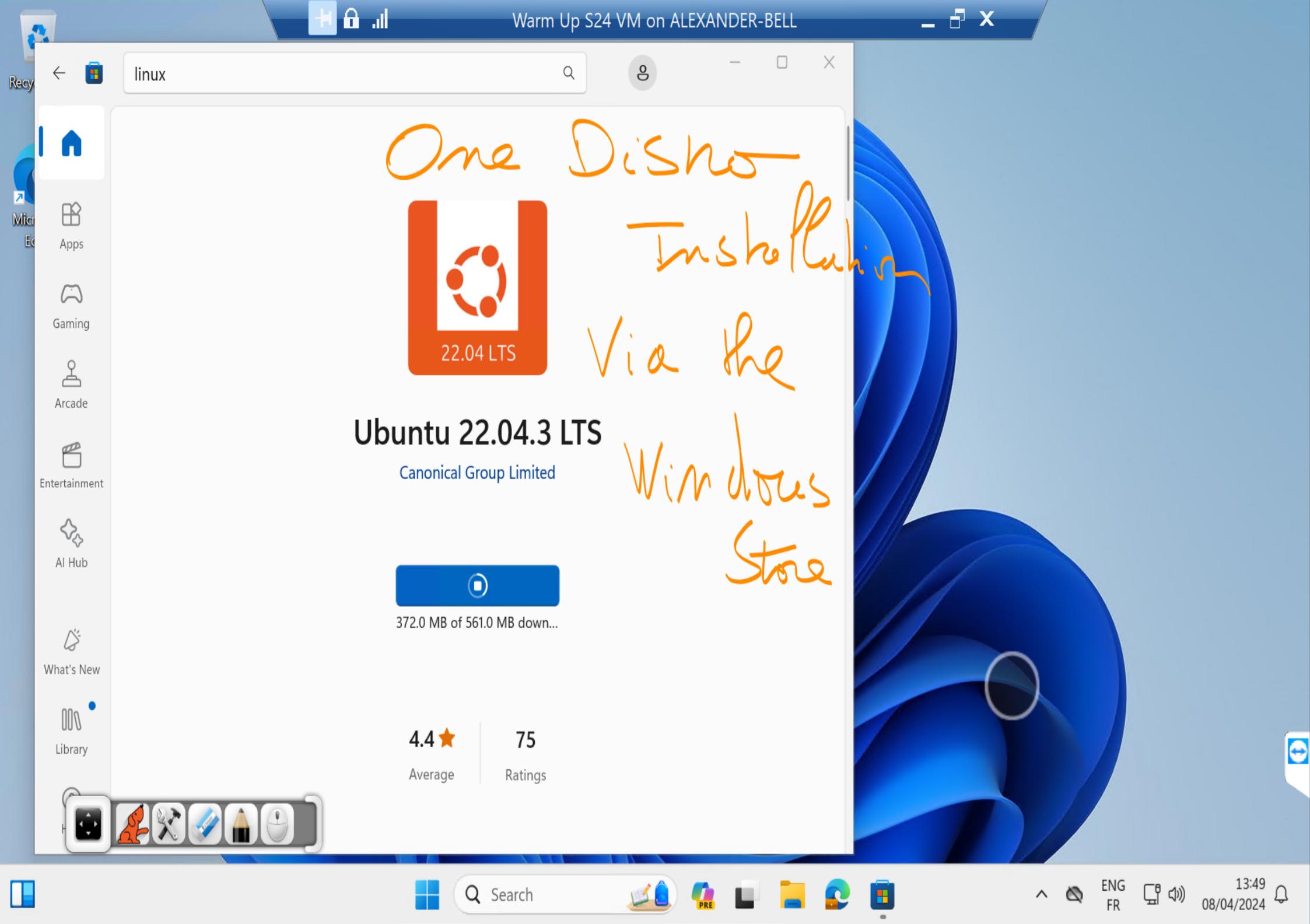
Main differences: Their PACKAGE MANAGERS

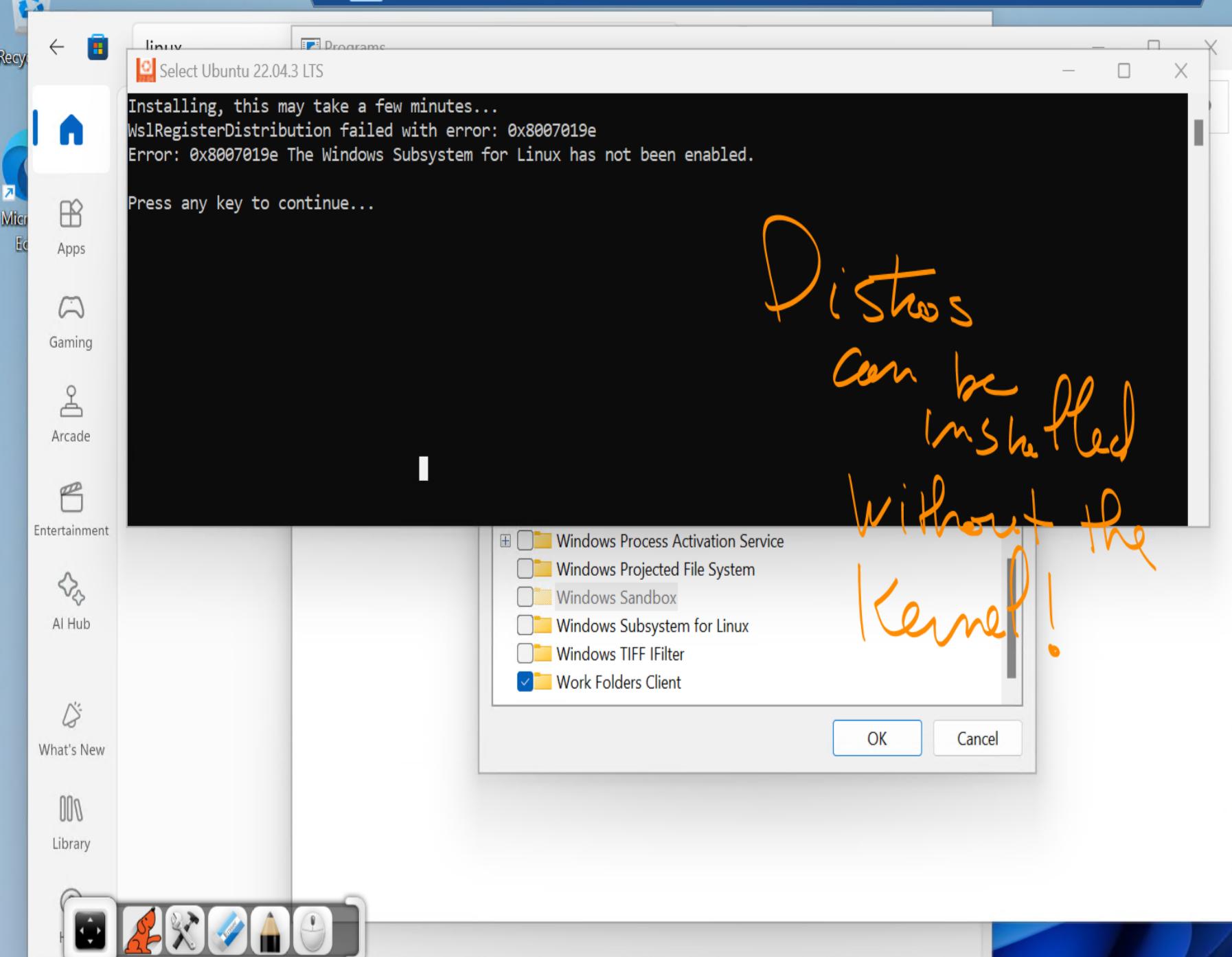
Debian Family : apt

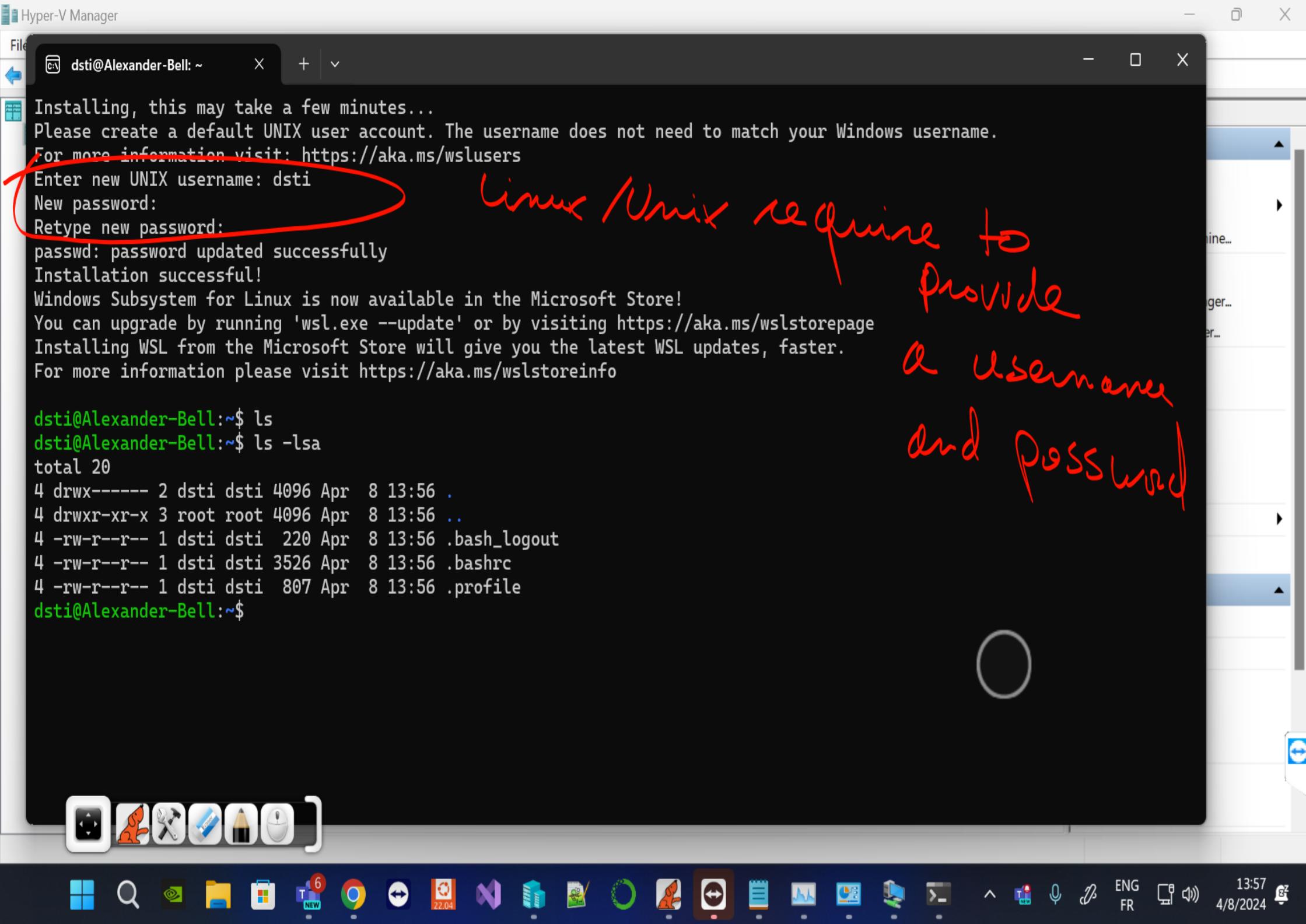
Fedora : yum

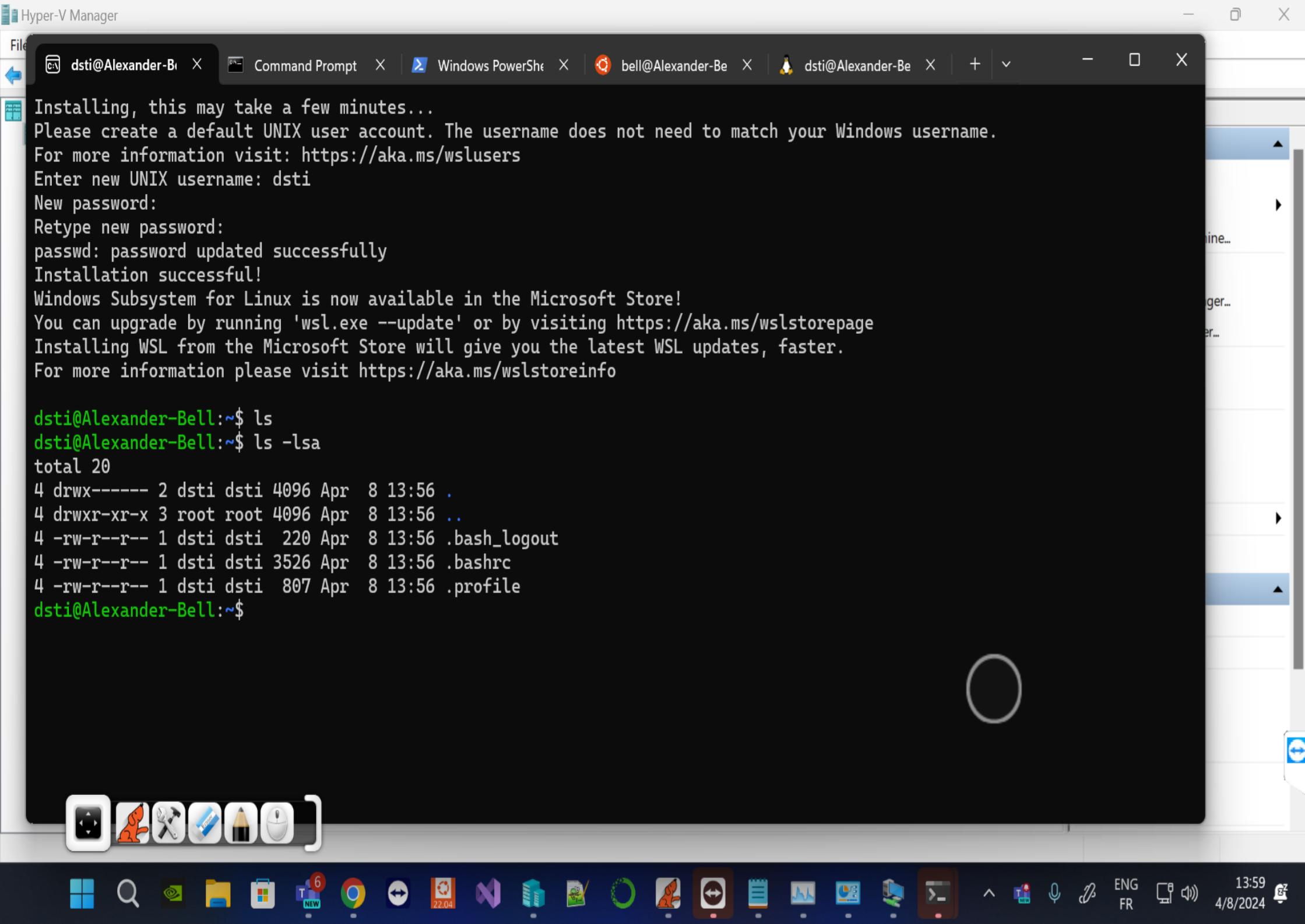
# With the WSL

- Kernel is installed via  
the Control Panel (Add  
Windows Features)
- Distributions: Microsoft  
Windows Store  
(or CMD or Powershell)









I'm having difficulty with  
enabling Hardware Virtualisation

⇒ Support ticket

We'll help as much as possible  
Mind if your hardware handles it  
(buy new otherwise)

Whenever you need assistance

- In class, from a ref
- Out of class, after support ticket

USE DSTI TeamViewer Quick Support (ps)  
app

# The Jupyter Notebook Server

Web Server  $\Rightarrow$  HTTPS Server  
+ (connected)

# Code Execution Environment

Python

Historical

Python Package

Manager



→ Programming language  
Python Interpreter  
(Core language  
Standard library  
+ ecosystem of  
non-standard library  
packages)

ANACONDA

Another package Manager  
+ A more global Python  
Env Manager



